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# USSR Space Life Sciences Digest

Index to Issues 26–29

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# USSR Space Life Sciences Digest

Index to Issues 26–29

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#### HOW TO USE THIS DOCUMENT

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The second section of this document, starting on page 75, is a key word index. Numbers following each entry in the index refer to page number of the present document. Within the key word list, topic area names are printed in bold face, as are the page numbers for the primary topic area listing. Page numbers not in bold following topic area names refer the reader to relevant abstract originally included under other topic areas.

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#### **ADAPTATION**

#### ISSUE 27

#### MONOGRAPH:

M160(27/90) Vinogradov VV.

Gormony, Adaptatsiya i Sistemnyye Reaktsii Organizma; Гормоны, Адаптация и Системные

Реакции Организма; [Hormones, Adaptation, and Systemic Reactions.]

Minsk: Nauka i Tekhnika; 1989.

[223 pages; 19 Tables; 56 Figures; 538 references]

Affiliation (book): Institute of Biochemistry; Belorussian Academy of Sciences

KEY WORDS: Adaptation; Endocrinology, Hormones, Stress; Biological Rhythms, Seasonal

Rhythms; Metabolism; Cardiovascular and Respiratory System

#### ISSUE 28

#### PAPERS:

P1239(28/90)\* Ivnitskiy YuYu, Moiseyev NYa,.

Tolerance of mice to various types of hypoxia and X-ray irradiation after exposure to hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 32-33.

[21 references; 10 in English]

Tolerance, Hypoxia; Radiobiology, X-rays

Mice

Adaptation, Hypoxia

P1281(28/90)\*\* Shatemirova KK, Zelenshchikova VA, Min'ko YuV.

Catalytic properties of monoamine oxidase in adaptation to barochamber hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 54-56.

(15 references; 5 in English)

Enzymology, Monoamine Oxidase, Mitochondrial Membrane

Rats

Adaptation, Hypoxia

#### CONFERENCE REVIEW:

CR14(28/90)\* Gippenreyter YeB.

Report on: International Conferences On Mountain (High Altitude) Medicine,

Prague, Czechoslovakia, October 19-23, 1988.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 57-59.

Key Words: Adaptation, High Altitude, Hypoxia, Personnel Selection, Human Performance

#### **ADAPTATION**

### ISSUE 29:

#### PAPER:

P1328(29/90)\*\* Balandina TN, Nikitin Yel, Kovalenko YeA, Savina VP. Biochemical aspects of human adaptation to the combined effects of head-down tilt, decreased barometric pressure and increased level of  $O_2$ .

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 56-57; 1990. [5 references; 1 in English]

Biochemistry, Metabolism, Lipid Peroxidation; Hematology, Erythrocytes Humans, Males Adaptation, Head-Down Tilt, Low Barometric Pressure, Hyperoxia, Exercise

#### **BOOK REVIEW:**

BR18(29/90) A.A. Azhayev. Review of G.N. Novozhilov, O.P. Lomov. *Hygienic Evaluation of Microclimate*. Leningrad: Meditsina: 1987; 112 pages. In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(3): 63; 1990.

KEY WORDS: Adaptation, Microclimate, Heat, Human Performance, Industrial Hygiene, Countermeasures, Endocrinology, Metabolism, Mineral Metabolism

# **AVIATION MEDICINE**

#### ISSUE 27

#### PAPER:

P1230(27/90) Mel'nik SG, Shakula AV, Gladkikh FD.

The effect of workload on the functional state of flight crews of ship-based aviation.

Voyenno-Meditsinksiy Zhurnal.

1989(7): 54-57. [No references]

Authors' Affiliations: USSR Medical Corps

Aviation Medicine, Functional State, Cardiovascular and Respiratory Systems Humans, Air Crews, Ship-Based Aviation Human Performance, Workload

#### **BOOK REVIEW:**

BR17(27/90)\*Gyurdzhian AA.

Review of: Ernsting J, and King, et al. (Editors).

Aviation Medicine.

London: Butterworth 1988, 738 pages.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 92-94; 1989.

KEY WORDS: Aviation Medicine, Human Performance, Aviation Psychology, Biodynamics,

Thermal Stress; Biological Rhythms

#### ISSUE 28

#### PAPERS:

P1252(28/90)\* Vlasov VV, Kopanev VI.

The effects of working in aviation on health status (epidemiological data).

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 4-9.

[56 references; 43 in English]

Aviation Medicine, Health Status Humans, Aviation Personnel Aviation Professions

P1271(28/90)\*\*Demirchoglan GG, Konakhevich YuG, Petlyuk VKh, Peshkov RV, Khlomenok PN, Sholpo LN, Brazhnik VI.

Experimental evaluation of the displacement of center of mass of the body in a man-chair system when the head is nodded.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 24-25; 1990.

[1 references; none in English]

Biomechanics, Displacement of Center of Mass, Head Nodding

Humans

Aviation Medicine, Ejection Sear

# **AVIATION MEDICINE**

P1270(28/90)\*\* Nikolayevskiy YeYe.

Diurnal rhythm of lipids, carbohydrates, and certain hormones in blood plasma in healthy pilots.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 21-23; 1990.

[22 references; 6 in English]

Metabolism, Lipids, Carbohydrates; Endocrinology Aviation Medicine, Humans, Pilots Biological Rhythms, Diurnal Rhythms

#### ISSUE 29:

#### PAPER:

P1294(29/90)\* Ponomarenko VA.

The category of health as a theoretical problem in aerospace medicine.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3):17-23; 1990.

[15 references; none in English]

Aviation Medicine, Human Performance, Health, Prophylaxis Humans, Flight Personnel; Research Program, Equipment and Instrumentation, Computer Systems

Extreme Factors, Countermeasures, Neurophysiology, Neurotransmitters, Nutrition,
Drugs, Non-Traditional Medicine, Immunology, Psychology, Stress, Stress Protectors,
Metabolism, Endocrinology

# BIOLOGICAL RHYTHMS

#### ISSUE 26

#### PAPERS:

P1193(26/90) Alyakrinskiy BS.

The problem of desynchronosis in space flight.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5):4-8; 1989.

[33 references; 5 in English]

Biological Rhythms, Desynchronosis; Circadian Rhythms, Work Schedules Humans, Cosmonauts, Animals Space Flight; Adaptation Syndrome

P1187(26/89) Alpatov AM.

A raster-method for analyzing the periodic structure of biological rhythms.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5):83-85; 1989.

[4 references; 1 in English]

Biological Rhythms, Periodic Structure Theoretical Article Mathematical Modeling, Raster Method

#### MONOGRAPH:

M158(26/90) Gazenko OG, Editor.
Bioritmologicheskiye issledovaniya v kosmicheskoy biologii i meditsine
Биоритмологические исследования в космической биологии и медицине
[Biological Rhythms In Space Biology and Medicine;]
Volume 64 In series: Problemy Kosmicheskoy Biologii,
Leningrad: Nauka; 1989.
[197 pages]

KEY WORDS: Biological Rhythms; Adaptation, Space Flight, Metabolism, Fat, Carbohydrates; Stress; Cardiovascular and Respiratory Systems; Human Performance, Shift Work, Endocrinology, Thyroid

# **BIOLOGICAL RHYTHMS**

#### ISSUE 27

#### PAPER:

P1204(27/90)\* Alpatov Am, Yevstratov YuA., Chernyshev VB, Lebedev MI, Zotov VA. *Free running circadian rhythms in the darkling beetle after space flight.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 31-33; 1989. [9 references; 5 in English]

Biological Rhythms, Circadian Rhythms, Free-Running, Motor Activity Beetles, Darkling
Space Flight, COSMOS-1887

# ISSUE 29:

#### PAPER:

P1330(29/90)\*\* Komarov FI, Chirkova EN, Suslov LS, Klionskaya AG, Bobina LV, Makarova TB.

Association of annual biological rhythms in red blood counts in healthy individuals and annual rhythms of changes in solar activity.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 60-62; 1990.

[11 references; none in English]

Biological Rhythms, Hematology, Red Blood Counts Humans, Males and Females

# **BIOSPHERICS**

# ISSUE 27

# MONOGRAPH:

M161(27/9) Khantseverov FR, Ostroukhov VV.

Modelirovaniye Kosmicheskikh Sistem Izucheniya Prirodnykh Resursov Zemli; Моделирование Космических Систем Изучения Природных Ресурсов Земли; [Modeling of Space Systems for Studying the Earth's Natural Resources]
Moscow: Mashinostroyenie; 1989.

[264 pages; 69 Figures]

KEY WORDS: Biospherics, Mathematical Modeling, Space Systems, Remote Sensing, Natural

Resources

# **BODY FLUIDS**

#### ISSUE 26

#### PAPER:

P1180(26/90) \*Lobachik VI, Zhidkov VV, Abrosimov SV.

Body fluid status during a 120-day period of hypokinesia with head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 57-61; 1989.

[6 references; none in English]

Body Fluids, Hydration, Extracellular Fluid; Metabolism, Mineral, Fats

Humans

Hypokinesia With Head-Down Tilt, Long-Term; Pharmacological Countermeasures, Physical Exercise, Ultraviolet Therapy

#### **ISSUE 29:**

#### PAPERS:

P1338(29/90) Zavadovskiy AF, Korotayev MM, Vavakin YuN.

Increasing human resistance to headward fluid redistribution.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Page 63.

Body Fluids, Headward Fluid Shifts, Cardiovascular and Respiratory Systems, Cerebral Hemodynamics

Humans, Age Differences, Patients, Atherosclerosis Countermeasures, Head-Down Tilt, Repeated Exposure

P1331(29/90) Abashev VYu, Andriyako LYa, Bubeyev YuA, Degtyarev VA, Remisov YuV. A technique for individual assessment of the level of redistribution of blood in humans during the acute period of adaptation to weightlessness.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Pages 5-6.

Body Fluids, Fluid Redistribution, Cardiovascular and Respiratory Systems Humans, Males
Assessment Technique, Tilt Test, Composite Index

#### BOTANY

#### **ISSUE 27**

PAPER:

P1213(27/90)\* Nevzgodina LV, Maksimova YeN, Kaminskaya YeV.

The effects of single hits by heavy ions of galactic cosmic radiation on Lactuca sativa seeds flown on board Salyut-6 and Salyut-7 space stations.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 66-70; 1989.

[15 references; 6 in English]

Genetics, Aberrations
Botany, Lettuce, Seeds
Space Flight, Long-term, Salyut-6, Salyut-7; Radiobiology, Heavy Ions

ISSUE 28

PAPERS:

P1235 (28/90)\* Anikeyeva ID.

Genetic studies of Arabidopsis seeds on space flights.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 22-25.

[14 references; 4 in English]

Genetics, Damage, Mutations, Accelerated Aging

Botany, Arabidopsis, Seeds

Space Flight, Short-Term, Long-Term; Zond-8, Soyuz, COSMOS, Salyut; Radiobiology, Cosmic Radiation

P1236(28/90)\*Nevzgodina LV, Maksimova YeN, Akatov YuA, Kaminskaya YeV, Marennyy AM. The effect of the vacuum of space on seeds of lettuce (Lactuca sativa) exposed on COSMOS series biosatellites.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 25-28.

[10 references; 4 in English]

Genetics, Cytogenetic Effects

Botany, Lettuce Seeds

Space Flight, COSMOS-1129, -1514, -1760; Radiobiology, Cosmic Radiation, Solar Radiation

P1253(28/90) Abramova VM, Vasil'yeva NG, Verigo VV, Marennyy AM, Portman Al.

Study of the biological effects of heavy charged particles of cosmic radiation on a population of higher plants -- Wolffia arrhiza.

In I Vsesoyuznyy Radiobiologicheskiy S"yezd; и Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume III Pushchino: USSR Academy of Sciences; 1989.

Pages 562-563.

Authors' affiliation Institute of Biomedical Problems, USSR Ministry of Health.

Botany, Biological Effects Wolffia arrhiza, Duckweed Radiobiology, HZE Particles

# **BOTANY**

P1249(28/98)\* Rumyantseva VB, Merzlyak MN, Mashinskiy AL, Nechitaylo GS.

The effects of space flight factors on the pigment and lipid components of wheat plants.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 53-55.

[15 references; 7 in English]

Botany, Pigment, Lipid Components Wheat Space Flight, Mir

#### MONOGRAPH:

M162(28/90) Grodzinskiy DM

Radiobiologiya Rasteniy, Радиобиология Растений [Radiobiology of Plants].

Kiev: Naukova Dumka; 1989.

[384 pages; 85 Figures; 7 Tables; 800 references]

Affiliation: N.G. Kholodnyy Botanical Institute, Ukrainian Academy of Sciences.

KEY WORDS: Botany, Radiobiology, Ionizing Radiation, Genetics, Mutagenesis, Cell Death

#### ISSUE 29:

#### PAPER:

P1292(29/90) Laurinavichyus RS, Kenstavichene PF.

The significance of the force of gravity in formation and growth of callus tissue in Arabidopsis.

In: M164(29/90) Flom TV (editor)

Trudy XXIII Chteniy Posvyashchennykh Razrabotke Nauchnogo Naslediya i Razvitiyu Idey K.E.

Tsiolkovskogo: Sektsiya "Problemy Kosmicheskoy Meditsiny i Biologii" Mediko-Biologicheskiye Problemy Obespecheniya Kosmicheskikh Poletov v Svete Idey K.E.

Tsiolkosvskogo
Труды XXIII Чтений Посвященных Разработке Научного Наследия и Развитию Идей К.Э.
Циолковского: Секция «Проблемы Космической Медицины и Биологии» Медико-Биологические
Проблемы Обеспечения Космических Полетов в Свете Идеы К.Э. Циолкосвского

Proceedings of the XXIII Lecture Series Devoted to Developing the Scientific Ideas of K.E.Tsiolkovskiy: Section on "Problems of Space Medicine and Biology. Biomedical Problems in the Support of Space Flight in Light of the Ideas of K.E. Tsiolkovskiy.

Kaluga 13-16, September 1988.

USSR Academy of Sciences: 1989: 98 pages.

Affiliation: Commission on Development of the Scientific Heritage of K.E. Tsiolkovskiy, USSR Academy of Sciences; K.E. Tsiolkovskiy State Museum on the History of Cosmonautics Pages 65-70.

[6 references: 3 in English]

Morphology, Cytology, Plant Tissue Culture, Callus Tissue, Dedifferentiation, Developmental Biology

Botany, Arabidopsis

Space Flight, Salyut-7, Weightlessness Simulation, Horizontal Clinostatting

#### ISSUE 26

#### PAPERS:

P1179(26/90)\* Mikhailov VM, Machinskiy GV, Buzulina VP, Geogriyevskiy VS, Nechayeva EN, Kryutchenko SG.

Tolerance for provocative tests under conditions of a 1-year exposure to hypokinesia with head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 54-56; 1989.

[7 references; none in English]

Cardiovascular and Respiratory Systems, Orthostatic Intolerance, Aerobic Capacity Humans, Males Hypokinesia with Head-down Tilt, Prophylactic Countermeasures, Physical Exercise, Drugs, Anti-g Suit; Provocative Tests, Tilt, Exercise Loading

P1181(260)\* Yevdokimova AG, Radzevich AE, Solovyeva FB, Vinokhodova TV, Mamayev VI, Belvayev SM, Ovchinnikova LK.

A study of orthostatic tolerance and status of central and peripheral hemodynamics in hypertensive subjects undergoing a 7-day period of "dry" immersion.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 62-65; 1989.

[9 references; 2 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Central and Peripheral, Orthostatic Tolerance

Humans, Males, Patients, Hypertension

Immersion, Dry; Tilt Test

P1182(26/90)\* Varosyan MA.

Functional and metabolic changes in the heart during adaptation to high-altitude hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 68-70; 1989.

[11 references; 3 in English]

Cardiovascular and Respiratory Systems, Cardiac Hypertrophy, Metabolism, Heart, Nucleic Acids

Rabbits

Adaptation, High Altitude Hypoxia

P1186(26/90) Kuznetsov VI.

Cardiac contractility in rats after chronic stress and thyroid.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 78-82; 1989.

[33 references; 8 in English]

Cardiovascular and Respiratory Systems, Cardiac Contractility

Rats, Female

Stress, Immobilization, Coarctation; Endocrinology, Thyroid Hormones

P1190(26/90) Tikunov BA, Kayfadzhyan MA, Oganesyan SS.

Ca<sup>2+</sup> reactivity of ventricular actomyosin in rats exposed to gravitational loading.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 88-89; 1989.

[8 references; 3 in English]

Cardiovascular and Respiratory Systems, Ca<sup>2+</sup> Reactivity, Ventricular Actomyosin Rats, Male Hypergravity, Acceleration

#### ISSUE 27

#### PAPERS:

P1202(27/90)\* Turchaninova VF, Yegorov AD, Domracheva MV. *Central and regional hemodynamics on long-term space flights.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 19-26; 1989.

[20 references; 6 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Central, Regional Humans, Cosmonauts Space Flight, Long-term, Salyut-6, Salyut-7, Exercise

P1208(27/90)\* Kuznetsov VI.

Cardiac contractility of guinea pigs exposed to long-term continuous stress.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 42-47; 1989.

[18 references; 3 in English]

Cardiovascular and Respiratory Systems, Cardiac Contractility Guinea Pigs Psychology, Stress

P1226(27/90) Beketov Al, Konyayeva Yel.

Circulation and oxygen pressure in the brains of alert and anesthetized rabbits in a head-down tilt position.

Fiziologicheskiy Zhurnal SSSR im I.M. Sechenova

75(11): 1548-1553.

Authors' affiliations: Medical Institute of Crimea, Simferopol; Sechenov Institute of Evolutionary Physiology and Biochemistry, Leningrad

Cardiovascular and Respiratory Systems, Circulation, Oxygen Pressure, Brain Rabbits, Alert, Anesthetized Head-Down Tilt

# ISSUE 28

#### PAPERS:

P1231(28/90)\* Gazenko OG, Shulzhenko YeV, Grigor'yev Al, Atkov OYu, Yegorov AD. *Medical investigations during an 8-month flight on Salyut-7-Soyuz-T.*Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 9-14.

[16 references; 7 in English]

Cardiovascular and Respiratory Systems, Neurophysiology, Vestibular System, Perception, Sensory Systems, Body Fluids, Endocrinology, Metabolism, Nutrition Humans, Cosmonauts

Space Flight, Long-Term, Salyut-7, Prophylactic Countermeasures, EVA

P1232(28/90)\*Kazakova RT, Katuntsev VP.

State of intracardiac and systemic hemodynamics in healthy humans exposed to a weightlessness simulation.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 15-17;1989.

[14 references; 4 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Intracardiac and Systemic Humans, Males

Weightlessness Simulations, Immersion, Hypokinesia with Head-Down Tilt

P1233(28/90)\* Buzulina VP, Popova IA, Vetrova YeG, Nosova YeA.

Interaction of cardiorespiratory and metabolic responses of humans to graded exercise.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 17-20:1989.

[16 references; 8 in English]

Cardiovascular and Respiratory Systems, Metabolism Humans, Males

Physical Exercise, Graded, Horizontal

P1238(28/90)\* Chernysheva ON.

Lipids in the cell membrane of the heart in rats after multiple exposure to an alternating magnetic field with frequency of 50 Hz.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1):30-31: 1990.

[12 references; 2 in English]

Cardiovascular and Respiratory Systems, Cell Membrane of the Heart

Rats

Radiobiology, Magnetic Field, Alternating

P1243(28/90)\* Ivanov SG, Markova Ll.

The use of the method of "dry" immersion in treatment of hypertensive crisis.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 40-42; 1990.

[16 references; 1 in English]

Cardiovascular and Respiratory Systems, Hypertensive Crisis Humans, Patients, Essential Hypertension, Males and Females Dry Immersion, Treatment

P1243(28/90)\* Turbasov VD, Artamonova NP, Nechayeva Yel.

Assessment of bioelectric activity of the heart during head-down tilt using traditional and modified EKG leads.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1):42-44; 1990.

[12 references: 3 in English]

Cardiovascular and Respiratory Systems, Bioelectric Activity of the Heart Humans, Males, Patients, Atherosclerosis Hypokinesia with Head-Down Tilt, Countermeasures, Exercise, Muscle Stimulation, Drugs, Equipment and Instrumentation, EKG Leads

P1245(28/90)\* Korolev AB.

Methods for measuring intracranial blood and cerebrospinal fluid circulation in chronic experiments involving induction of decompression sickness.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1):47-49: 1990.

[2 references; 1 in English]

Cardiovascular and Respiratory Systems, Circulation, Blood, Neurophysiology, Brain, Cerebrospinal Fluid

Rabbits

**Decompression Sickness** 

P1278(28/90)\*\* Nekhayev AS, Andriyenko Yul. Criteria of endurance of a hypercapnic-hypoxic test Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(2): 46-48; 1990. [3 references; none in English]

Cardiovascular and Respiratory Systems, Endurance Criteria Humans, Men, Individual Differences Hyperoxia, Hypercapnia

P1279(28/90)\*\* Savina VP, Ryzhkova VYe, Nikitin Yel, Balandina TN, Bragin LKh, Sivuk AK, Bychkov VP, Bobrova GG.

The composition of exhaled air, gas and energy exchange and biochemical parameters in blood and urine of humans under conditions of long-term exposure to hypercapnia and hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):49-51; 1990.

[11 references; none in English]

Cardiovascular and Respiratory Systems, Exhaled Gas, External Respiration, Biochemical Parameters, Metabolism, Lipid Peroxidation, Nitrogen Metabolism Humans, Males, Older Subjects Hypercapnia, Hypoxia, Pressurized Environment, Long-Term

#### ISSUE 29:

#### PAPERS:

P1296(29/90)\*Meyerson FZ.

The phenomenon of adaptive stabilization of the structures and protection of the heart.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 28-35; 1990.

[57 references; 31 in English]

Cardiovascular and Respiratory Systems, Cardiac Structures, Protection

Rats, Isolated Hearts

Adaptation, Preadaptation, Stress, Immobilization, Ischemia, Reperfusion, Endocrinology, Adrenergic System, Calcium

P1297(29/90)\* Fedorov BM, Sebekina TV, Sinitsyna TM, Streltsova YeN, Vakulenko VM, Nikolayeva TG.

Stress and circulation in humans.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 35-40; 1990.

[36 references; 16 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, General, Cerebral Humans, Males

Human Performance, Mental Work, Stress, Hypokinesia

P1307(29/90)\* Beketov Al, Konyayeva Yel.

Characteristics of the effects of caffeine on circulation and oxygen tension in the brain of alert rabbits undergoing head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 64; 1990.

Cardiovascular and Respiratory Systems, Neurophysiology, Brain Circulation, Oxygen Circulation

Rabbits

Head-Down Tilt, Caffeine

P1323(29/90)\*\* Suvorov PM, Doroshev VG, Ivanchikov AP, Sidorova KA.

Types of hemodynamics in flight crews and their significance for clinical and flight certification practice.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 44-48; 1990.

[18 references; 1 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Typology

Humans, Flight Crews, Patients, Neurocirculatory Asthenia, Myocardial Dystrophy, Myocardial Sclerosis, Essential Hypertension, Age Effects

Aviation Medicine

P1332(29/90) Alferov IV, Anashkin OD, Voronova OK, Poyedintsev GM.

Changes in hemodynamic parameters on long-term space flights.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine:

IXth All-Union Conference

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 8-9.

Cardiovascular and Respiratory Systems, Hemodynamic Parameters, Typology Humans, Males, Cosmonauts Space Flight, Repeated Flights

P1335(29/90) Vil'-Vil'yams IF, Kotovskaya AR, Kokova NI, Sukhanov YuV. Endurance of +Gx acceleration in humans after a 370-day period of hypokinesia.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine:

IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 31-32.

Cardiovascular and Respiratory Systems, Acceleration Tolerance, +Gx

Humans, Males

Hypokinesia With Head-Down Tilt, Long-Term, 370 Day, Countermeasures, Exercise

## **DEVELOPMENTAL BIOLOGY**

#### ISSUE 28

SPECIAL FEATURE: The First Baby Born in Space: The Unique "Incubator-2" Experiment is a Success

Translation of an article by I. Nekhamkin in Sovetskiy Soyuz: June 1990

#### ISSUE 29:

#### PAPERS:

P1349(29/90) Mitashov VI, Oygenblink EA, Tuchkova SYa, Grigoryan YeN, Mal'chevskaya IE. Characteristics of limb and lens regeneration in tritons exposed to space flight. In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health Page 323-25.

Developmental Biology, Regeneration, Limbs, Lens Amphibians, Tritons Space Flight, COSMOS-1667, -1887, -2044

P1350(29/90) Ostroumova TV, Luchinskaya NN.

The growth of oocytes of the Spanish triton in weightlessness.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health Page 329-31

Developmental Biology, Oocyte Growth, Genetics, Delayed Effects Amphibians, Spanish Tritons Space Flight, COSMOS-1887, -939

# DIGESTIVE SYSTEM

# **ISSUE 29:**

# MONOGRAPH:

M165(29/90) Smirnov KV. Pishchevareniye i Gipokinesiya. Пищеварение и Гипокинезия *[Digestion and Hypokinesia]*. To be published in third quarter of 1990 by Meditsina.Publishing House, Moscow.

KEY WORDS: Digestive System, Hypersecretory Stomach, Dysbacteriosis, Hypokinesia

## **ENDOCRINOLOGY**

#### **ISSUE 27**

#### PAPERS:

P1203(27/90)\* Prodan NG (USSR) and Baranska V (Poland).

Morphological research on the adrenal glands of rats after flight on COSMOS-1667.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 27-30; 1989.

[15 references; 1 in English]

Endocrinology, Adrenal Glands, Morphology

Rats. Males

Space Flight, COSMOS-1667

P1211(27/90)\* Yangalycheva EA.

Hypothalamus/pituitary neurosecretory system in rats exposed to high-altitude hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 54-62; 1990.

[21 references; 3 in English]

Endocrinology, Hypothalamus, Pituitary; Neurophysiology, Neurosecretory Apparatus; Morphology

Rats

Adaptation, Hypoxia, High-Altitude

P1219(27/90)\* Zagorskaya YeA.

Endocrine response to low frequency electromagnetic fields of continuous and intermittent generation.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 4-15; 1990.

[126 references; 54 in English]

Endocrinology, Endocrine Response Humans and Animals, Review Article

Radiobiology, Low-Frequency Electromagnetic Fields, Constant, Intermittent

#### ISSUE 28

#### PAPERS:

P1275(28/90)\*\*Goncharov SS, Shekhova AN.

Hormonal response of the steroid-producing glands of female hamadryas baboons to long-term hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):34-37; 1990.

[12 references; 4 in English]

Endocrinology, Reproductive System, Steroids, Biological Rhythms, Menstrual Cycle, Diurnal Rhythms

Primates, Hadryas Baboons, Female

Hypokinesia, Long-Term

## **ENDOCRINOLOGY**

P1277(28/90)\*\* Lakota NG, Kvasova MM, Larina IM, Vorob'yev DV, Ostrovskaya GZ. Efficacy and realization mechanisms of the protective effects of sidnocarb under conditions of experimental weightlessness and chilling.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):42-46; 1990.

[43 references; 16 in English]

Endocrinology, Catecholamines, Thermal Protection

Humans

Immersion, Chilling, Pharmacological Countermeasures, Sidnocarb, Neurophysiology

P1282(28/90)\*\* Zagorskaya YeA,. Rodina GP.

The responses of the endocrine system and peripheral blood in rats to single and repeated exposure to a pulsed low-frequency electromagnetic field.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 56-60; 1990.

[25 references; 11 in English]

Endocrinology, Adrenal Cortex, Thyroid, Testes

Rats

Radiobiology, Electormagnetic Field, Pulsed, Low Frequency; Immobilization Stress

#### ISSUE 29:

#### PAPERS:

P13012(29/90\*\* Pozharskaya LG, Noskov VB.

Hormonal regulators of calcium metabolism after space flights varying in duration.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 18-20; 1990.

[13 references; 5 in English]

Endocrinology, Hormonal Regulators, Calcitonin, Gastrin, PTH. Metabolism, Calcium, Body Fluids, Fluid-Electrolyte Balance Humans. Cosmonauts

Space Flights, Short and Long-Term

P1315(29/90)\*\* Plakhuta-Plakutina, GI, Kabitskiy YeN, Dmitriyeva NP, Amirkhanyan YeA. Morphology of the thyroid gland and concentration of thyroid hormones in blood of rats in experiments on COSMOS-1667 and -1887 biosatellites.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 25-27; 1990.

[15 references; 2 in English]

Endocrinology, Thyroid, Morphology, Hormone Levels

Rats

Space Flight, Short-Term, COSMOS-1667, -1887, Adaptation, Initial, Transitional

## **ENDOCRINOLOGY**

P1316(29/90) Kabitskiy YeN.

Functional activity of the pituitary-thryoid system in response to a 370-day period of hypokinesia with head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 28-30; 1990.

[15 references; 8 in English]

Endocrinology, Pituitary-Thyroid System Humans, Males Hypokinesia, Head-Down Tilt, Countermeasures, Exercise

P1346(29/90) Besova NV, Savel'yev SV.

Morphological changes in the ultimobranchial glands of caudate amphibians under conditions of space flight.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: |Xth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 288-289 .

Endocrinology, Ultimobranchial Glands, Morphology Amphibians, Tritons Space Flight, COSMOS, Foton

## **ENZYMOLOGY**

#### ISSUE 26

#### PAPERS:

P1182(26/90)\* Potapov PP.

Changes in activity of mitochondrial oxidative enzymes in skeletal muscles of rats during the recovery period after hypokinesia varying in duration.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 65-67; 1989.

[12 references; 1 in English]

Enzymology, Oxidative Enzymes; Musculoskeletal System, Skeletal Muscles, Mitochondria

Rats

Hypokinesia, Long- and Short-term, Recovery Period

P1183(26/90)\* Ivashkevich AA, Nosar' VI, Kurbakov LA.

Neutral peptide hydrolases in the blood serum and lungs under conditions of hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 70-75; 1989.

[18 references; none in English]

Enzymology, Peptide Hydrolases, Blood Serum, Lungs, Proteolysis, Tissue Respiration

Rats, Males

Cardiovascular and Respiratory System, Hypoxia; Adaptation, Barochamber Training

#### ISSUE 27

### PAPER:

P1225(27/90) Shepotinovskiy VI, Rogoznyaya NA, Mikashinovich ZI.

Activity of digestive enzymes in response to immobilization stress and its pharmacological correction with adrenoreceptor blocking agents.

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.

1989(6):49-52.

[10 references; none in English]

Authors' Affiliation: Central Scientific Research Laboratory, Rostov Medical Institute

Enzymology, Digestive Enzymes; Gastrointestinal System

Rats

Adaptation; Immobilization Stress; Pharmacological Countermeasures; Adrenoblockers

## **ENZYMOLOGY**

## ISSUE 28

PAPER:

P1234(28/90)\* Potapov PP.

Activity of certain oxidative enzymes and transaminase in the liver of rats during recovery after hypokinesia up to 30 days in duration.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1):20-22; 1990.

[16 references; 1 in English]

Enzymology, Oxidative Enzymes, Transaminase, Liver Rats Hypokinesia, Immobilization Cages

### **EQUIPMENT AND INSTRUMENTATION**

## ISSUE 28

#### PAPER:

P1244(28/90)\* Demina GN, Kirichenko GI.

Algorithm for automatic recognition of base points on an impedance plethysmogram.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1):44-47; 1990.

[8 references; none in English]

Cardiovascular and Respiratory Systems

Humans

Equipment and Instrumentation, Impedance Plethysmography, Base Points

### ISSUE 29:

#### PAPER:

P1311(29/90)\*\*Adamovich BA, Bayevskiy RM, Berseneva AP, Funtova II.

State-of-the-art automated evaluation of functional state in cosmonautics and preventive medicine today.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 11-18; 1990.

[26 references; 1 in English]

Equipment and Instrumentation, Automated Diagnosis and Prognosis, Avtosan-83, Kontrol, Vita, Ritm

**Humans** 

Operational Medicine, Space Medicine, Preventive Medicine

## **EXOBIOLOGY**

## ISSUE 26

#### PAPER:

P1194\*26/90) Larentyev GA, Rakitin LYu, Piskunova LA. Simulation of abiogenic thermal polycondensation of amino acids in the Earth's

lithosphere in areas of intense volcanic activity. Zhurnal Evolyutsionnoy Biokhimii i Fiziologii

XXV(4): 417-423; 1989. [13 references; 11 in English]

Authors' Affiliation: A.N. Bakh Institute of Biochemistry, USSR Academy of Sciences

Exobiology, Abiogenesis, Thermal Polycondensation Amino Acids Lithosphere, Simulation, Volcanic Activity

#### MONOGRAPH:

M156(26/90) Kustov VV, Belkin VI, Kruglikov GG.

Biologicheskiye Effekty Lunnogo Grunta; Биологические Эффекты Лунного Грунта; [The

Biological Effects of Lunar Soil]

Volume 61 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

[103 pages; 47 references; 6 in English]

KEY WORDS: Exobiology, Lunar Soil, Biological Effects, Fibrogenesis

### ISSUE 27

#### PAPER:

P1229(27/90) Kuzicheva YeA, Malko IL.

Abiogenic thermal synthesis of nucleotides in the presence of lunar soil.

Zhurnal Evolyutsionnoy Biokhimii i Fiziologii.

XXV(6):697-701; 1989. [13 references; 4 in English]

Authors' Affiliation: Institute of Cytology, USSR Academy of Sciences, Leningrad

Exobiology; Abiogenic Synthesis; Thermal

Nucleotides Lunar Soil

## **GENETICS**

## ISSUE 29:

## PAPERS:

P1324(29/90)\*\*Gus'kov YeP, Shkurat TP, Shimanskaya Yel, Yanusheyevich SV, Nikolayeva

Cytogenetic consequences of treatment with hyperbaric oxygen. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 48-52; 1990.

[29 references; 17 in English]

Genetics, Cytogenetic Mutations, Hematology, Lymphocytes Humans, Patients Hyperbaric Oxygenation

# HABITABILITY AND ENVIRONMENT EFFECTS

#### ISSUE 27

## PAPER:

P1210(27/90)\* Mukhamediyeva LN, Savina VP, Nikitin Yel.

Thermoregulatory responses in humans to moderate levels of hypercapnia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 51-54; 1990.

[20 references; 7 in English]

Thermoregulatory Response Humans, Males Habitability and Environment Effects, Hypercapnia; Pressurized Environment

### ISSUE 28

### PAPER:

P1280(28/90)\*\*Berlin AA.

The functional status of the skin in humans inhabiting pressurized environments of limited size.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(2):52-54; 1990.

[9 references; none in English]

Skin, Protective Function, Desquamation Humans, Males, Females Habitability and Environment Effects, Pressurized Environment, Personal Hygiene

### **ISSUE 29:**

### PAPERS:

P1293(29/90\*)Gazenko OG, Grigor'yev Al, Meleshko GI, Shepelev YeYa. *Habitability and man-rated bioregenerative life support systems*Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(3): 12-17; 1990.
[24 references; 3 in English]

Habitability and Environment Effects, Biospherics, Ecological Specifications, Human Ecology Theoretical Article, Humans Life Support Systems, Bioregenerative, CELSS, Space Flights, Long-Term, Mars Mission

# HABITABILITY AND ENVIRONMENT EFFECTS

### **MONOGRAPH:**

M163(29/90) Beregovoy GT, Yarpolov VI, Baranetskiy II, Vysokanov VA, Shatrov YaT. Spravochnik po Bezopasnosti Kosmicheskikh Poletov Справочник по Безопасности Космических Полетов [Handbook on Space Flight Safety]

Moscow: Mashinostroyeniye; 1989.

[366 pages; 68 Figures; 30 Tables; 63 References; 2 in English]

**KEY WORDS:** Habitability and Environmental Effects, Space Flight, Safety, Radiobiology, Equipment and Instrumentation, Cosmonaut Selection, Cosmonaut Training, Human

Performance, Contingency Situations, Survival

## **HEMATOLOGY**

## ISSUE 27

PAPER:

P1215(27/90)\* Orlova TA, Kiselev RK. Use of a ferrocerone test to measure iron reserves under various living

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 77-81; 1990.

[15 references; 2 in English]

Hematology, Nutrition, Blood Iron; Ferrocerone Test Humans Hypokinesia with Head-Down Tilt

ISSUE 28

PAPERS:

P1257(28/90) Gubin AT, Sakovich VA, Shafirkin AV.

The development of radiation damage in the hemopoletic system.

In I Vsesoyuznyy Radiobiologicheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 904-905.

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Hematology, Hemopoietic System Mathematical Modeling Radiobiology, Radiation Damage

P1259(28/90 Smirnova OA, Zukhbaya TM.

The stimulating effect of chronic irradiation with small dose rates on lymphopolesis and granulcytopolesis. (Results of mathematical modeling and experimental data).

In I Vsesoyuznyy Radiobiologicheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 923-924.

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Hematology, Granulocytopoiesis, Lymphocytopoiesis, Chalone Mechanism Mathematical Modeling, Mammals, Rats Irradiation, Chronic, Low Dose

## **HEMATOLOGY**

P1251(28/90)\* Rachkov AG, Rachkova LG, Daniyarov SB. Hemostasis in prolonged exposure to γ-irradiation at high altitudes. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1): 55-57. [10 references; none in English]

Hematology, Hemostasis Dogs Radiobiology, γ-Irradiation, High Altitudes

P1285(28/90)\*\* Pak GD, Sverchkova VS, Danilevskaya TN.

The hemostasis system under conditions of various levels of hypoxic hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(2): 4-9;1990.

[62 references; 18 in English]

Hematology, Hemostasis Literature Review Hypoxia, Hypoxic

ISSUE 29:

PAPER:

P1317(29/90)\*\*Ivanov AP, Goncharov IB, Repenkova LG.

Changes in rheological parameters and hemodynamics in response to a 14-day period of hypokinesia with head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 30-32; 1990.

[19 references; 7 in English]

Hematology, Rheological Parameters, Cardiovascular and Respiratory Systems, Hemodynamics Humans, Males
Hypokinesia, Head-Down Tilt

P1329(29/90)\*\*Belchenko DI. Rosette formation in peripheral blood of rats exposed to hypokinesia. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(4): 58-59; 1990. [12 references; none in English]

Hematology, Rosette Formation, Macrophages, Histology Rats, Males Hypokinesia, Immobilization Cages

## **HEMATOLOGY**

P1339(29/90) Kalandarova MP.

Results of hematological studies in long-term hypokinesia with head-down tilt.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина.Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 76-77.

Hematology, Blood Parameters, Immunology Humans, Males Hypokinesia, Head-Down Tilt, Long-Term, 370 Days

## **HISTOLOGY**

## ISSUE 26

## PAPER:

P1189(26/90) Kirzhner VM, Kordenko AN, Ushakov IB. Reactions of skin basophils of rats to exogenous hypoxia: A study of certain correlations.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 86 -88; 1989. [1 references; none in English]

Histology, Skin Basophils Rats Hypoxia

## **HUMAN PERFORMANCE**

#### ISSUE 26

#### PAPERS:

P1169(26/90) \*Ponomarenko VA, Lapa VV, Nikitin IS.

Psychophysical characteristics of sensorimotor performance of an operator after short-term exposure to simulated hypogravity.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 9-12; 1989.

[[11 references; none in English]

Human Performance, Sensorimotor Performance; Neurophysiology, Proprioception

Humans, Operators

Hypokinesia with Head-down Tilt, Immersion

P1199(26/90) Bobko NA.

Diurnal variations in the efficiency of operator mental performance in shift work.

Fiziolgicheskiy Zhurnal.

35(6): 83-87.

[20 references: 4 in English]

Author's Affiliation: Research Institute of Occupational Hygiene and Diseases, Ukrainian

Ministry of Public Health

Human Performance, Shift Work; Cognitive Task

Humans, Operators

Biological Rhythms, Diurnal Variations

#### MONOGRAPH:

M155(26/90) Frolov AA.

Apparatura i Metody Issledovaniya Deyatel'nosti Operatory;

Аппаратура и Методы Исследования Деятельности Операторы

[Apparatus and Methods for Investigating Operator Performance;]

Moscow: Nauka; 1989.

[112 pages]

Affiliation: Institute of Higher Nervous Activity and Neurophysiology, USSR Academy of Sciences

KEY WORDS: Human Performance; Humans; Operators; Equipment and Instrumentation;

Research Apparatus; Research Methods; Psychology; Neurophysiology

### **HUMAN PERFORMANCE**

## ISSUE 28

#### PAPERS:

P1248(28/90)\* Yegorov SV, Kostrina VG. Evaluation of operator's readiness to act in an emergency Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1): 52-53. [4 references; none in English]

Human Performance, Evaluation, Emergency Response Human, Operator Monotony

P1269(28/90)\*\*Ivanov VI, Ivanov VI.

Techniques and means for optimizing functional status of flight school cadets during preflight activity.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):18-21; 1990.

[37 references; none in English]

Human Performance, Optimization, Functional Status Humans, Flight School Cadets Preflight Training, Exercise, Feedback

P1283(28/90)\*\* Matseychik Ya, Terelyak Ya (Poland).

The effect of relaxation on perceptual/motor performance of humans.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 62;1990.

[6 references; 3 in English]

Human Performance, Perception, Perceptual/Motor Performance Humans Autogenic Training, Relaxation

ISSUE 29:

### PAPERS:

P1308(29/90)\* Sapova NI, Grozov VM.

The effect of various pharmacological agents on general state, heart rhythm, and performance efficiency of operators.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 64; 1990.

Human Performance, Performance Efficiency, Cardiovascular and Respiratory Systems, Heart Rhythm

Humans, Males, Operators

Mental Tasks, Pharmacological Agents

## **HUMAN PERFORMANCE**

P1342(29/90) loseliani KK, Khisambeyev ShR.

Predicting mental performance of cosmonauts on long-term flights.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 236-237 .

Human Performance, Mental Tasks, Humans, Males, Cosmonauts Space Flight, Long-Term, Equipment and Instrumentation, Pleven-87

P1345(29/90) Salnytskiy VP, Shevchenko AG, Dudukin AV, Ryabov EV, Nikonov AV. A technique of semi-full-scale simulation and its use inflight to increase psychological readiness of cosmonauts.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoj Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 271-273.

Human Performance, Psychological Readiness Humans, Males, Cosmonauts Space Flight, Man-Machine Systems, Equipment and Instrumentation, Semi-Full-Scale Simulation, Cosmonaut Training, Mathematical Modeling

### **IMMUNOLOGY**

#### ISSUE 27

#### PAPERS:

P1212(27/90) Mirrakhimov MM, Kitayev MI, Tokhtabayev AG. *The immune status of individuals suffering from acute altitude sickness.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 62-66; 1990. [18 references; 9 in English]

Immunology, Immune Status Humans, Males, Individual Differences Adaptation, High Altitude Sickness

P1216(27/90)\* Novikov VS, Bortinsovskiy VN.

The effect of smoking on human resistance in a pressurized environment.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 81-85; 1990.

[20 references; 8 in English]

Immunology, Resistance; Cardiovascular and Respiratory Systems; Exercise Tolerance Humans, Men Smoking, Habitability and Environment Effects; Pressurized Environment

P1220(27/90)\* Ignatova OV, Berlin AA, Pak ZP, Popov IG. On the protective function of the skin. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 15-19; 1990. [36 references; 17 in English]

Immunology, Skin, Protective Function Humans Operational Medicine

#### **ISSUE 28**

### PAPER:

P1260(28/90) Smirnova OA.

Humoral immunity in irradiated mammals (Mathematical Model).
In I Vsesoyuznyy Radiobiologicheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 924-925.

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Immunology, Humoral Immunity Mathematical Modeling, Mammals Radiobiology, Irradiation

## **IMMUNOLOGY**

## ISSUE 29:

### PAPER:

P1348(29/90) Lesnyak AT, Vorotnikova IYe, Rykova MP, Meshkov DO. Proliferative, suppressor, and cytotoxic activity of splenocytes of rats in the experiment on COSMOS-2044.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Page 320-321.

Immunology, Splenocytes, Proliferation, Suppressor, Cytotoxic

Space Flight, COSMOS-2044, Tail Suspension

#### ISSUE 26

PAPERS:

P1173(26/90)\* Levinskikh MA, Sychev VN.

Growth and development of one-celled algae as a component of an "algobacterial cenosis - fish" ecosystem under space flight conditions

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 32-35;1989.

[12 references; 1 in English]

Life Support System, CELSS; Algobacterial Cenosis-Fish Ecosystem

Microbiology, Algae, Chlorella; Fish

Space Flight; COSMOS-1187

P1174(26/90)\* Sychev VN, Levinskikh MA, Livanskaya OG.

Investigation of the growth and development of Chlorella exposed to space on COSMOS-1887.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 35-39; 1989.

[9 references; none in English]

Life Support System, CELSS Microbiology, Algae, *Chlorella* Space Flight, COSMOS-1887

P1175(26/90)\* Drugova NA, Chernova LS, Mashinskiy AL.

The formation of a wheat microbial cenosis on a manned space flight.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 39-42; 1989.

[10 references; 1 in English]

Life Support Systems, CELSS Botany, Wheat, Microbiology

Space Flight, Manned

P1185(26/90)\* Vasilenko II, Shevel' NM, Sinyak YuYe.

Matter balance during the catalytic oxidation of water mixtures by hydrogen peroxide.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5) 75-78; 1989.

[11 references; 2 in English]

Life Support System, Water Regeneration, Catalytic Oxidation, Low Temperature Hydrogen Peroxide

Matter Balance

#### ISSUE 28

### PAPER:

P1242(28/90)\* Kozyarin IP, Suk VG, Maslenko AA, Khil'ko OK.

Hygienic evaluation of oxygen produced by a system containing a solid polymer electrolyte.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina

24(1): 36-40; 1990.

[20 references; none in English.]

Evaluation, Oxygen Rats, Humans Life Support System, Solid Polymer Electrolyte

#### **ISSUE 29:**

#### PAPERS:

P1299(29/90)\* Kozyarin IP.

A hygienic evaluation of certain moisture and carbon dioxide absorbers recommended for cleaning the air of pressurized environments

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina

24(3): 43-45; 1990.

[12 references; none in English]

Hygienic Evaluation, Microbiology Moisture and Carbone Dioxide Absorbers, Zeolite, Silica Gel Life Support Systems, Air Cleaning, Pressurized Environments

P1304(29/90)\* Adamovich BA, Ratner GS.

A methodology for evaluating and selecting a life support system during the early stages of design.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina

24 (3): pp. 56-57; 1990 [9 references; 1 in English]

Life Support Systems, Regenerative, Evaluation, Selection Theoretical Article Mathematical Modeling

P1322(29/90)\*\*Ivanova IYe, Derednyayeva TA, Alekhina TP, Shaydarov Yul.

The higher plant component in man-rated biological (bioregenerative) life support system.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 40-43; 1990.

[18 references; none in English]

**Functional Characteristics** 

Botany, Higher Plants, Wheat, Peas, Carrots, Beets, Cabbage

Life Support System, Bioregenerative, CELSS, Higher Plants-Man-Mineralization

P1347(29/90) Ivanov IYe, Derendyayeva TA, Mashinskiy AL, Nechitaylo GS.

The effect of space flight on the sowing and productive properties of seeds.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина.Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

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Developmental Biology, Plant Development, Genetics, Mutations Botany, Plants, Seeds, Lettuce, Dill, Radish, Garden Cress Life Support Systems, Space Flight, Long-Term, Mir, Radiobiology

P1299(29/90)\* Kozyarin IP.

A hygienic evaluation of certain moisture and carbon dioxide absorbers recommended for cleaning the air of pressurized environments

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina

24(3): 43-45; 1990.

[12 references; none in English]

Hygienic Evaluation, Microbiology

Moisture and Carbone Dioxide Absorbers, Zeolite, Silica Gel Life Support Systems, Air Cleaning, Pressurized Environments

P1304(29/90)\* Adamovich BA, Ratner GS.

A methodology for evaluating and selecting a life support system during the early stages of design.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina

24 (3): pp. 56-57; 1990

[9 references; 1 in English]

Life Support Systems, Regenerative, Evaluation, Selection Theoretical Article Mathematical Modeling

P1322(29/90)\*\*Ivanova IYe, Derednyayeva TA, Alekhina TP, Shaydarov Yul.

The higher plant component in man-rated biological (bioregenerative) life support system.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 40-43: 1990.

[18 references; none in English]

**Functional Characteristics** 

Botany, Higher Plants, Wheat, Peas, Carrots, Beets, Cabbage

Life Support System, Bioregenerative, CELSS, Higher Plants-Man-Mineralization

P1347(29/90) Ivanov IYe, Derendyayeva TA, Mashinskiy AL, Nechitaylo GS. *The effect of space flight on the sowing and productive properties of seeds.* In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина.Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Page 307-9 .

Developmental Biology, Plant Development, Genetics, Mutations Botany, Plants, Seeds, Lettuce, Dill, Radish, Garden Cress Life Support Systems, Space Flight, Long-Term, Mir, Radiobiology

### MATHEMATICAL MODELING

### ISSUE 28

#### PAPERS:

P1258(28/90) Smirnova OA.

Dynamics of critical systems and radiation death of mammals (Mathematical modeling).

In I Vsesoyuznyy Radiobiologicheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 922-923.

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Radiobiology, Radiation Death, Hematology, Hemopolesis; Gastrointestinal System, Intestinal Follicles
Mammals
Mathematical Modeling

P1272(28/90)\*\* Grigoryan SS, Simonov LG, Tsaturyan AK.

A mathematical model of intracranial blood and cerebrospinal fluid circulation system as applied to the study of the effects of extreme conditions.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 25-29; 1990.

[27 references; 14 in English]

Cardiovascular and Respiratory Systems, Circulation, Blood, Neurophysiology, Body Fluids, Cerebrospinal Fluid
Mathematical Modeling, Humans
Extreme Conditions, Tilt Tests, Provocative Tests

#### ISSUE 29:

### PAPER:

P1298(29/90)\*Kondrachuk AV, Sirenko SP. A model of the caloric response of the semicircular canal. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(3): 40-43; 1990. [11 references; 6 in English]

Neurophysiology, Semicircular Canal Mathematical Modeling Caloric Response, Space Conditions

## **METABOLISM**

### ISSUE 26

#### PAPERS:

P1178(26/90)\* Zaytsev LB, Larina ON, Popova IA.

Serum proteins and products of nitrogen metabolism in humans undergoing long-term hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5) 50-53; 1989.

[7 references; 6 in English]

Metabolism, Nitrogen; Serum Proteins

**Humans** 

Hypokinesia With Head-down Tilt, Long-Term; Countermeasures; Drugs; Physical Exercise

P1195(26/90) Kuznetsov VI, Sarayev YuV, Chirkin AA.

Activation of glycolysis, decreased glycogen reserves and lack of glucocorticoid control of enzymes of carbohydrate metabolism in the liver of rats undergoing long-term hypokinetic stress.

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya

1989(4):56-59.

[13 references; 3 in English]

Authors' Affiliations: Department of Biochemistry, Vitebsk Medical Institute.

Metabolism, Carbohydrate; Glycolysis; Enzymology

Rats, Males

Hypokinesia, Long-Term; Immobilization Stress

### ISSUE 27

#### PAPERS:

P1209(27/90)\* Tarasov YuA, Ostovskiy YuM, Satanovskaya VI, Liopo Av, Velichko MG, Abakumov GZ.

Endogenous ethanol in the blood and tissues of rats exposed to hypobaric hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 47-51; 1990.

[29 references; 11 in English]

Metabolism, Endogenous Ethanol

Rats

Hypoxia, Hypobaric

## **METABOLISM**

P1217(27/90)\* Tolkacheva NV, Levachev MM, Kobozev GV, Safronova LG, Sorokina AG. Use of the method of thin layer chromatography to study lipid ligands in the serum albumin of athletes.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 85-88; 1989.

[23 references; 2 in English]

Metabolism, Lipid Peroxidation, Serum Ligands Humans, Athletes Exercise

P1218(27/90)\* Potapov PP.

Activity of NADP-dependent cytoplasmic dehydrogenases in the liver and adipose tissue of rats during recovery after hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 89-90; 1989.

[11 references; none in English]

Metabolism, Cytoplasmic Dehydrogenases, Liver, Fat Rats Hypokinesia, Recovery

ISSUE 29: PAPERS:

P1301(29/90)\*Gorozhanin VS, Lobkov VV.

Hormonal and metabolic reactions of the human body to long-term fasting.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 47-50: 1990.

[18 references; 3 in English]

Metabolism, Endocrinology Humans, Males Nutrition, Fasting, Long-Term

P1305(29/90)\* Klimovich VV, Lukashik NK.

Parameters of thiamine metabolism in tissues of rats exposed to hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 58-59; 1990.

[17 references; 7 in English]

Metabolism, Thiamin

Rats, Males

Hypokinesia, Immobilization Cages

## **MICROBIOLOGY**

## ISSUE 26

## MONOGRAPH:

M152 (26/90)Parfenov GP.

Невесомость и Элементарные Биологические Процессы; Nevesomost' i Elementarnyye Biologicheskiye Biologicheskiye Protsessy, [Weightlessness and Elementary Biological Processes:

Volume 57 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1988.

[272 pages; 46 Tables; 26 Figures; 631 references]

KEY WORDS: Microbiology, Precellular Organisms, One-Celled Organisms, Botany, Plant and Animal Cells, Cytology, Histology, Tissue Cultures; Space Flight, Radiobiology, Ionizing Radiation

#### ISSUE 26

## PAPERS:

P1176(26/90)\* Oganov VS, Rakhmanov AS, Ternovoy SK, Novikov VYe, Dubonos SL. *Mineral density of skeletal bones in humans exposed to simulated microgravity.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 43-46: 1989.

[21 references; 11 in English]

Musculoskeletal System, Skeletal Bones, Mineral Density

Humans

Hypokinesia With Head-Down Tilt; Countermeasures; Physical Exercise

P1196(26/9) Volozhin Al, Amelkina.GV.

Changes in the periodontium in long-term hypodynamia and the use of diphosphonates and silatran to prevent these changes.

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.

1989(3): 72-75.

[12 references; 1 in English].

Authors' Affiliation: N.A. Semashko Moscow Medical Stomatological Institute

Musculoskeletal System, Periodontium

Rats, Males

Tail Suspension; Prophylactic Countermeasures; Silicon; Diphosphonates

#### MONOGRAPH:

M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Kostnaq Sistema i Nevesomost;

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka: 1989.

[184 pages; 27 Tables; 44 Figures; 317 References; 201 in English]

Musculoskeletal System, Skeletal System Humans, Cosmonauts; Rats, Tortoises

Space Flight, Long-Term

### **ISSUE 27**

## PAPERS:

P1206(27/90)\* Belakovskiy MS, Khaidakov MS.

Effects of active metabolites of Vitamin D<sub>3</sub> on the bones of rats exposed to different hypokinesia paradigms.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 36-39; 1989.

[18 references; 11 in English]

Musculoskeletal System, Bones; Metabolism, Calcium, Phosphorus

Rats, Male

Nutrition, Vitamin D<sub>3</sub> Metabolites, Hypokinesia, Tail Suspension, Immobilization Cages

P1207(27/90)\* Shvets VN, Pankova AS, Gol'dovskaya MD. Vnukova ZE.

Changes induced by hydroxydimethyl aminopropylidene diphosphonate in the response of bone tissue in rats to hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 39-42; 1989.

[14 references; 10 in English]

Musculoskeletal System, Bone Tissue; Metabolism, Calcium

Rats, Male

Hypokinesia, Immobilization Cages, Hydroxymethyl Aminopropylidene Diphosphonate

P1222(27/90) Stupakov GP, Volozhin Al.

Changes in human bone under conditions of bedrest and weightlessness: The human skeleton under conditions of bedrest and weightlessness.

136 - 147

In: M157(26/90) Stupakov GP, Volozhin AI.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Musculoskeletal System, Bone; Mechanical Properties; Bone Minerals

Humans, Cosmonauts, Patients, Osteoporosis

Space Flight, Salyut-6, Bedrest

P1223(27/90) Stupakov GP, Volozhin Al.

Changes in human bone under conditions of bedrest and weightlessness: Bone changes when functional loading of the skeleton is reduced from the standpoint of rapid and slow-developing osteoporosis.

147-150.

In: M157(26/90) Stupakov GP, Volozhin AI.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Musculoskeletal System, Bone

Humans

Reduced Functional Loading, Osteoporosis, Rapid and SlowDeveloping

P1224(27/90) Stupakov GP, Volozhin Al.

Changes in human bone under conditions of bedrest and weightlessness: General principles of bone changes under conditions of weightlessness and its simulations.

150- 158.

In: M157(26/90) Stupakov GP, Volozhin AI.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness]. Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Musculoskeletal System, Bone; Metabolism, Metabolic Rate, Calcium Humans, Rats, Dogs Weightlessness, Simulated Weightlessnsess

ISSUE 28

PAPERS:

P1273(28/90)\*\* Tatarinov AM, Dubonos SL, Yanson KhA, Oganov VS, Dzenis VV, Rakhmanov AS

Ultrasound diagnosis of the status of the tibia in humans undergoing a 370-day period of head-down tilt.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 29-31.

[15 references; 6 in English]

Musculoskeletal System, Tibia Bone, Ultrasound

Humans

Hypokinesia With Head-Down Tilt, 370-Day, Prophylactic Countermeasures, Exercise

P1274(28/90)\*\* Morukov VB, Orlov OI, Belakovskiy MS. Kazeykin VS, Zaychik VYe, Shvets VN, Tumanova IYu.

The effect of simulated weightlessness on calcium metabolism and state of bone tissue in experimental animals.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 31-34.

[25 references; 13 in English]

Musculoskeletal System, Bone; Metabolism, Calcium; Endocrinology

Rats, Male

Hypokinesia, Immobilization Cages; Hypodynamia, Tail Suspension

P1286(28/90) Stupakov GP, Volozhin.

The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing bones of rats: Restructuring of bone tissue.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Pages: 49-61.

Musculoskeletal System, Weight-Bearing Bones, Femur, Tibia, Brachium

Rats

Space Flight, COSMOS-615, -782, -936, 1129

P1287(28/90) Stupakov GP, Volozhin.

The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing skeleton of rats: State of organic and mineral components.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Pages: 61-65.

Musculoskeletal System, Weight-Bearing Bones, Vertebrae, Femur, Organic and Mineral Components

Rats

Space Flight, COSMOS-936, -1129

P1288(28/90) Stupakov GP, Volozhin.

The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing bones of rats: Mechanical properties of bone tissue.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka: 1989.

Pages: 65-76.

Musculoskeletal System, Weight-Bearing Bones, Femur, Tibia, Humerus; Mechanical

**Properties** 

Rats

Space Flight, COSMOS-615, -782, -936, -1129

P1289(28/90) Stupakov GP, Volozhin.

The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing bones of rats: Artificial gravity as a means to prevent bone changes in microgravity.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Pages: 76-79.

Musculoskeletal System, Weight-Bearing Bones, Tibia

Rats

Space Flight, COSMOS-936; Artificial Gravity

P1290(28/90) Stupakov GP, Volozhin.

The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on non-weight-bearing bones of rats.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Pages: 79-82.

Musculoskeletal System, Non-weight-bearing Bones, Ribs, Jaw, Teeth

Rats

Space Flight, COSMOS-936, -1129

### **ISSUE 29:**

#### PAPERS:

P1291(29/90) Stupakov GP, Volozhin Al.

The bone system of experimental animals under conditions of weightlessness: The effect of space flight on the skeleton of tortoises.

In: M157(26/90) Stupakov GP, Volozhin Al.

Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость

[The Skeletal System and Weightlessness].

Volume 63 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

Pages: 82-90.

Musculoskeletal System, Bones, Skeleton; Metabolism, Low

**Tortoises** 

Space Flight, Short- and Long-Term, COSMOS-782, -605, -613, Soyuz-20

P1313(29/90)\*\* Oganov VS, Cann C, Rakhmanov AS, Ternovoy SK A computer tomographic investigation of the musculoskeletal system of the spine in humans after long-term space flight.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 20-21; 1990.

[11 references; 6 in English]

Musculoskeletal System, Bones, Spine, Computer Tomography, Muscle Density; Mineral Loss Humans, Cosmonauts Space Flight, Long-Term, Salyut-7, Hypokinesia with Head-Down Tilt

P1314(29/90)\*\*Il'ina-Kakuyeva Yel.

Morphohistochemical investigation of the skeletal muscles of rats in an experiment on biosatellite COSMOS-1887.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 22-25; 1990.

[21 references; 9 in English]

Musculoskeletal System, Skeletal Muscles, Morphohistochemical Analysis, Fast-Twitch; Slow-Twitch

Rats

Space Flights, COSMOS-1887

#### ISSUE 26

PAPER:

P1170(26/90) Shlyk GG, Rotenberg MA, Shirvinskaya MA, Korol'kov VI, Magedov VS. Characteristics of nocturnal sleep in monkeys on the ground and during space flight on COSMOS-1667.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 12-17: 1989.

[12 references; 9 in English]

Neurophysiology, Sleep Monkeys Space Flight, COSMOS-1667

P1171(26/90) Lychakov DV, Pashchin AN, Boyadzhiyeva-Mikhaylova A, Khristov I. (Latter two are Bulgarian)

A study of the structure of the receptor organs of the vestibular apparatus in rats after flight on COSMOS-1667.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 17-26: 1989.

[43 references; 25 in English]

Neurophysiology, Vestibular System; Morphology; Receptor Organs Rats, Male Space Flight, COSMOS-1667

P1192(26/90)\* Korolev AB.

Study of the pathogenesis of the neurological form of decompression sickness in rabbits.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 92-93;1989.

[9 references; 6 in English]

Neurophysiology, Pathogenesis; Brain

Rabbits

Decompression Sickness

P1198(26/90) Ivanov AV.

Change in reflexive vestibular activity in response to orthostatic loading. Vestnik Otorinolaringologii.

1989(4): 16-19.

[15 references: none in English]

Author's Affiliation: Belorussian Research Institute on Neurology, Neurosurgery and

Physiotherapy, Minsk

Neurophysiology, Vestibular Activity Humans, Males

Orthostatic Loading, Stand Test, Tilt Test

## ISSUE 27

#### PAPERS:

P1205(27/90)\* Karkishchenko NN.

Specification for an "ideal" drug to prevent space motion sickness (space adaptation syndrome.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 33-36; 1989.

[16 references; 3 in English]

Neurophysiology, Space Adaptation Syndrome; Human Performance, Mental Work Capacity Humans, Patients, Vestibular Tolerance, Diminished Rotation, Pharmacological Countermeasures

P1214(27/90)\* Verbitskaya LB, Fedorenko VS, Kabitsyna RA..

Remote ultrastructural changes in cerebellar cortex of rats after exposure to accelerated carbon ions.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 71-77; 1989.

[2 references; 1 in English]

Neurophysiology, Cerebral Cortex

Rats

Radiobiology, Accelerated Carbon Ions, γ-Radiation; Remote Effects

P1227(27/90) Moskalenko YuYe, Beketov Al, Maksimiuk VF, Skoromnyy NA.

Cerebrovascular effects of motion sickness.

Fiziologicheskiy Zhurnal SSSR im I.M.Sechenova.

75(11): 1560-1567; 1989.

[12 references; 2 in English]

Authors' Affiliations: Institute of Evolutionary Physiology and Biochemistry, Leningrad;

Crimean Medical Institute, Simferopol

Neurophysiology, Cerebrovascular Effects; Cardiovascular and Respiratory Systems, Cerebral Circulation

Rabbits

Motion Sickness, Head-Down Tilt

#### ISSUE 28

### PAPERS:

P1240(28/90)\*Gitsov LG, Burneva VG, Verbitskaya LB, Kabitsyna RA, Fedorenko VS. Ultrastructural changes in neurons of the arcuate nucleus-medial eminence complex in rats irradiated with carbon ions and  $\gamma$ -radiation.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 34-36...

[6 references; none in English]

Neurophysiology, Neurons, Arcuate Nucleus, Medial Eminence

Rats, Female

Radiobiology, Carbon Ions, y-Radiation

P1254(28/90) Yegorov AYe, Prosvernitsyn SA.

On the genesis of postradiation edema of the brain.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 873-874...

Authors' affiliation: Scientific Research Institute of Military Medicine

Neurophysiology, Brain, Edema, Blood-Brain Barrier

Rats, Males

Radiobiology, γ-Irradiation; High Doses

P1255(28/90) Antipov VV, Fedorov VP, Ushakov IB.

Structural and metabolic aspects of modification of radiation effects on the central nervous system.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 861-862...

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health; Voronezh

Medical Institute

Neurophysiology, Central Nervous System, Metabolism

Rats, Dogs

Radiobiology, Radiation; Modifiers, Hypoxia, Hyperoxia, Alcohol, Acceleration, Vibration

P1256(28/90) Fedorenko BS, Kabintsyna RA, Smirnova OA, Krivitskaya GN, Verbitskaya LB, Derevyagin VM, Gitsov L, Burneva V, Popov VI, Portman AI.

Morphological changes in brain neurons in rats irradiated with accelerated charged particles.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 895-896...

Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health; Brain Institute, USSR Academy of Medicine; Institute for the Study of the Brain, Sofia, Bulgaria

Neurophysiology, Brain Neurons

Rats

Radiobiology, Accelerated Charged Particles

P1246(28/90)\* Mikhaylov VM, Kornilova LN, Zhernakov AF, Voskresenskiy AD, Pometov YuD. Aleksevev VN.

Correlation between orthostatic tolerance and status of the vestibular function in humans after long-term space flights.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24 (1):49-50; 1990.

[9 references; 1 in English]

Neurophysiology, Vestibular Function, Orthostatic Tolerance Humans, Cosmonauts

Space Flight, Long-Term, Salyut-6

P1247(28/90)\* Vorob'yev OA, Zaritskaya VV, Krylov YuV.

The relationship between vertical optokinetic nystagmus and susceptibility to motion sickness in humans.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 49-50; 1990.

[12 references; 7 in English]

Neurophysiology, Vertical Optokinetic Nystagmus Humans, Males, Individual Differences Motion Sickness

#### **ISSUE 29:**

### PAPERS:

P1295(29/90) Ul'yanskiy LS, Ivanov VT, Mikhaleva II, Sudakov KV. Delta-sleep peptide as a modulator of cardiac activity: Theoretical recommendations for practice.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina,

24(3): 23-28; 1990.

[24 references; 4 in English]

Cardiovascular and Respiratory Systems, Cardiac Activity, Protective Effects

Rats, Rabbits

Neurophysiology, Parasympathetic Nervous System, Vagus Nerve, Enzymology, Delta-Sleep Peptide, Psychology, Stress, Immobilization Effects

P1303(29/90)\* Stolbkov YuK, Maslova YeP.

Nystagmus in individuals with asymmetrical afferentiation of the otoliths.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3):53-56; 1990.

[9 references; 3 in English]

Neurophysiology, Nystagmus Humans, Patients Otolith Asymmetry

P1318(29/90)\*\* Dmitriyev AS, Taits MYu, Dudina TV, Kandybo TS, Yelkina Al.

The role of glucocorticoids in postvibrational shifts of inhibitory mediation in brain structures.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 32-33; 1990.

[14 references; 3 in English]

Neurophysiology, Inhibitory Mediation, Brain Structures

Rats. Male

Endocrinology, Glucocorticoids, Vibration Effects

P1325(29/90)\* Krotov VP, Simonov LG, Trombovetskiy YeV.

Epidural and subdural recording of intracranial pressure in response to postural tests.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 53; 1990.

[10 references; 5 in English]

Neurophysiology, Body Fluids, Intracranial Pressure, Equipment and Instrumentation Rabbits

Postural Tests

P1334(29/90) Bayevskiy RM, Bogomolov VV, Tazetdinov IG.

Assessment of autonomic homeostasis in the operational medical system for monitoring the health of cosmonauts.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 16-17.

Neurophysiology, Autonomic Homeostasis, Psychology, Stress

Humans, Cosmonauts

Space Flight, Operational Medicine, Equipment and Instrumentation, Cosmonaut Monitoring System

P1336(29/90) Gorgiladze Gl. Maveyev AD.

The effect of weightlessness on eye movement responses.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Page 51-52.

Neurophysiology, Eye Movement Response Humans, Cosmonauts
Space Flight, Salyut-6, -7

# **NEUROPHYSIOLOGY**

P1351(29/90) Karkishchenko NN, Dimitriadi NA.

Anticonvulsants as protective agents in space motion sickness.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine:

IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 82-83.

Neurophysiology, Space Motion Sickness Rats, Humans Pharmacological Countermeasures, Anticonvulsants

P1353(29/90) Polyakov BI, Smirnova TM, Speranskaya MS. Psychophysiolgical characteristics of people susceptible and resistant to motion

sickness.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine:

IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Page 262-263.

Neurophysiology, Motion Sickness, Suceptibility Humans, Males, Individual Differences Psychology, Psychophysiological Parameters

### NUTRITION

### ISSUE 26

#### PAPERS:

P1188(26/90) Arustamov OV, Khaydakov MS.

The effect of increased consumption of vegetable protein on calcium metabolism in rats undergoing hypokinesia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 85-86; 1989.

[5 references; 4 in English].

Metabolism, Calcium

Rats, Males

Nutrition, Vegetable Protein; Hypokinesia; Tail Suspension

P1197(26/90) Klimovich VV, Lukashik NK.

Thiamin metabolism in rats with a B1 deficiency exposed to hypokinesia.

Voprosy Pitaniya. 1989(4): 62-65.

[18 references; 6 in English]

Authors' Affiliation: Grodensk Medical Institute.

Metabolism, Thiamine

Rats, Male

Nutrition, B<sub>1</sub> Deficiency; Hypokinesia; Immobilization Cages

ISSUE 29:

#### PAPER:

P1300(29/90)\*Novoselov VG.

Hygienic aspects of the use of calorie-deficient diets enriched with wild plants.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3):45-47; 1990.

[3 references; none in English]

Survival, Botany, Wild Plants, Biological Effects, Human Performance

Humans, Expedition Members, Males

Nutrition, Deficient Diets

## OPERATIONAL MEDICINE

#### ISSUE 29:

#### PAPERS:

P1333(29/90) Akhapkina VI, Goncharov IB.

Prospects for improving pharmacological support of space flights.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 15-16.

Neurophysiology, Pharmacological Countermeasures, Nootropic Drugs, GABA, GHBA Humans, Cosmonauts Operational Medicine, Space Flight

P1340(29/90) Komarova LM.

Do we need a physician on the crew for the Mars mission?

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 94-96.

Operational Medicine, Crew Composition, Physician Humans, Cosmonauts Space Flight, Long-Term, Mars Mission

## **PERCEPTION**

## ISSUE 26

### MONOGRAPH:

M159(26/90) Kovalenko PA.

Prostranstvennaya oriyentirovka pilotov: Psikhologicheskie osobennosti

Пространственная ориентировка пилотов: Психиологические особенности [Spatial orientation of pilots: Psychological Characteristics]

Moscow: Transport; 1989.

[231 pages: 65 tables; 28 figures; 132 references; 18 in English]

KEY WORDS: Perception; Spatial Orientation; Psychology; Aviation Medicine; Human

Performance; Humans, Pilots; Pilot Training

## PERSONNEL SELECTION

## **ISSUE 28:**

#### PAPER:

P1287(28/90)\*\* Medenkov A, Treťyakov N. Can the psychologically "incompatible" work together? Aviatsiya i Kosmonavtika.

1990(2): 32-33.

Authors' Affiliation: USSR Medical Corps

Human Performance, Small Group Performance Humans, Aviation Personnel, Military Psychology, Personnel Selection, Compatibility

### **ISSUE 29:**

## PAPERS:

P1337(29/90) Grigor'yev LS, Smirnova AV, Voronkov Yul, Myasnikov VI. Some new approaches to the problem of medical occupational selection.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine:

IXth All-Union Conference]

Kaluga: 19-21 June 1990. Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Page 55-57.

Personnel Selection, Cosmonaut Selection, Human Performance, Equipment and Instrumentation Humans, Cosmonauts, Twin Studies Operational Medicine, Medical Factors, Neurophysiology, Genetics

P1352(29/90) Ioseliani KK, Narinskaya AL, Tereskhina SA.

On psychological selection of cosmonauts for repeated flights.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 234-236.

Personnel Selection, Cosmonaut Selection, Space Flight, Repeated Flights, Psychology, Human Performance

Humans, Patients, Age Differences Hypokinesia With Head-Down Tilt

### **PSYCHOLOGY**

#### ISSUE 26

### MONOGRAPH:

M154(26/90) Berezin FB.

Psikhicheskaya i Psikhofiziologicheskaya Adaptatsiya Cheloveka; Психическая и

Психофизиологическая Адаптация Человекаь

[Psychological and Psychophysiological Adaptation in Humans]

Leningrad: Nauka; 1988.

[270 pages; 36 Tables; 34 Figures; 237 References; 110 in English]

Affiliation: Institute of Biological Problems of the North; USSR Academy of Sciences; Far

Eastern Division

Psychology, Stress; Human Performance

Humans Adaptation

**ISSUE 27** 

#### PAPER:

P1228(27/90) Anishchenko TG, Burshina SN, Shorina LN.

An analysis of factors determining sex differences in the stress responses of white rats.

Byulleten' Eksperimental'noy Biologii i Meditsiny.

1989(11):616-618.

[15 references; 3 in English]

Authors' affiliation: N.G. Chernyshevskiy University, Saratov

Psychology, Stress Response Rats, Males and Females Gender Differences, Genetics

#### **ISSUE 28**

### PAPERS:

P1268(28/90)\*\* Kuznetsov ON, Yegorov BA, Frantsen BS.

Characteristics of color selection in the Luscher test as an indicator of typical emotional status of flight personnel.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):15-18; 1990.

[8 references; none in English]

Psychology, Emotional Status Aviation Medicine, Flight Crews Color Preferences

## **PSYCHOLOGY**

P1276(28/90)\*\*Shlyk GG, Shirvinskaya MA, Rotenberg VS, Yefimova MYa, Eliava VM, Sheremet IP, Kolpakova NF.

The role of typological differences in behavior of animals during adaptation to an extreme stimulus.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2):38-41: 1990.

[10 references; 2 in English].

Adaptation, Extreme Situations, Conditioned Responses, Recovery Primates, Rhesus Monkeys Psychology, Typology, Behavior

## ISSUE 29:

#### PAPERS:

P1302(29/90)\* Yevdokimov VI.

Risk factors for the occurrence of neuroses and psychosomatic illnesses in flight crews.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 50-53; 1990 [9 reference; 2 in English]

Psychology, Neuroses, Psychosomatic Illness Humans, Flight Crews Aviation Medicine, Risk Factors

P1306(29/90)\* Terelyak Ya, Kobos Z (Poland).

Psychological determinants of time to complete flight training.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 59-60; 1990 [9 references; all in Polish]

Aviation Medicine, Flight Training, Human Performance Humans, Flight Personnel Psychology, Test Scores

P1341(29/9) Zaprisa NS.

Dynamics of parameters of communicative activity in the system for psychological analysis of cosmonaut functional status.

İn: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Page 232.

Human Performance, Functional State Humans, Cosmonauts Psychology, Psychodiagnosis, Speech Analysis

## **PSYCHOLOGY**

P1343(29/90) Myasnikov VI, Ivanov AA.

A multimethod evaluation of the psychophysiological state and behavior of humans undergoing a 370-day period of hypokinesia with head-down tilt.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages 250-251.

Psychology, Psychophysiological State, Human Performance Humans, Males Hypokinesia With Head-Down Tilt, Long-Term, 370-Day

P1344(29/90) Myasnikov VI, Polyakov VV, Zhukova OP, Ponomareva II,[USSR], Momand AA [Afghanistan], Aleksandrova AA, Stoilova I [Bulgaria].

The study of cosmonauts' sleep in flight on space station Mir.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина Тезисы Докладов 1X Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]

Kaluga: 19-21 June 1990.

Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;

Institute of Biomedical Problems, USSR Ministry of Health

Pages: 251-252.

Psychology, Neurophysiology, Sleep Patterns, Adaptation Humans, Cosmonauts Space Flight, Mir

#### ISSUE 26

#### PAPERS:

P1191(26/90)\* Cherkasov GV.

Acid tolerance of erythrocytes exposed to constant magnetic fields varying in rate of induction increase.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(5): 90-92; 1989.

[15 references; none in English]

Hematology, Erythrocytes, Acid Tolerance

Rats, Male

Radiobiology, Magnetic Field, Induction Increase Rate

P1199(26/90) Tabukashvili RI, Ushakov IB.

Certain biochemical mechanisms underlying the combined effects of extreme factors.

Voprosy Meditsinskoy Khimii. 35(4): 111-114; 1989.

[15 references; 1 in English]

Authors' Affiliation: Tblisi Medical Institute

Radiobiology, Ionizing Radiation, Liver

Rats. Males

Hypoxia, Microwave Radiation, Radioprotective Effects

P1201(26/90)Tabukashvili RI, Ushakov IB.

Possible mechanisms of the radiomodifying effect of exogenous hypoxia on microwave radiation.

Radiologiya.29(4): 529-532; 1989.

[14 references; 1 in English]

Authors affiliation: Tblisi Medical Institute.

Radiobiology, Ionizing Radiation, Liver

Rats, Males

Hypoxia, Microwave Radiation, Radioprotective Effects

### MONOGRAPH:

M153(26/90) Antipov VV (Editor)

Biofizicheskiye Osnovy Deystviya Kosmicheskoy Radiatsii i Izlucheniy Uskoriteley; Биофизические Основы Действия Космической Радиации и Излучений Ускорителей

[The Biophysical Bases for the Effects of Cosmic Radiation and Radiation from Accelerators.]

Volume 60 In series: Problemy Kosmicheskoy Biologii,

Leningrad: Nauka; 1989.

[255 pages; 32 Tables; 70 Figures; 327 references; 114 in English]

KEY WORDS: Radiobiology; Cosmic Radiation, Accelerators; Biophysics; Biological Effects;

Hadrons

### **ISSUE 27**

#### PAPERS:

P1221(27/90) Zukhbaya TM.

Periodicity of hemopolesis during continuous  $\gamma$ -irradiation with low dose rates.

In: I Vsesoyuznyy Radiologicheskiy S"yezd: Tezisy Dokladov; Всесоюзный Радиологический Съезд: Тезисы Докладов ю [I All-Union Radiobiological Congress: Paper Abstracts] Moscow, 21-27 August 1989.

Pushchino: USSR Academy of Sciences; 1989.

Author's Affiliation: Institute for Biomedical Problems, Moscow

Hematology, Hemopoiesis, Perodicity

Rats

Radiobiology, γ-Irradiation, Continuous

ISSUE 28

#### PAPERS:

P1266(28/90) Vorozhtsova SV, Gerasimenko VN.

Cytogenetic damage to mammalian cells after exposure to charged particles with relativistic energy.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; И Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume III Pushchino: USSR Academy of Sciences; 1989.

Pages 562-563.

Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health.

Genetics, Cytogenetic Damage, Corneal Epithelium, Lymphocytes

Mice, Humans

Radiobiology, Charged Particles, Relativistic Energy

P1261(28/90) Benevodenskiy VN, Kuznetsova IV.

Methodological approach to determining the biological effects of heavy ions of galactic cosmic radiation.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume IV Pushchino: USSR Academy of Sciences; 1989.

Pages: 994-995.

Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Radiobiology, Biological Effects Microbiology, Yeast Cells

Heavy Ions, Galactic Cosmic Radiation; Space Flight, COSMOS

P1262(28/90) Kabachenko AN, Fedorenko BS, Portman AI.

Cataractogenic effectiveness of accelerated charged particles of high energy.

In I Vsesoyuznyy

S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume V

Pushchino: USSR Academy of Sciences; 1989.

Pages: 1193...

Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Radiobiology, Cataractogenesis

Mice

Accelerated Charged Particles, High Energy

P1263(28/90) Fedorenko BS.

Carcinogenic effectiveness of accelerated charged high energy particles.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume V Pushchino: USSR Academy of Sciences; 1989.

Pages: 1223-1224.

Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of

Health

Radiobiology, Carcinogenesis Rats. Females Charged Particles, High Energy

P1264(28/9) Vladimirov VG, Krasil'nikov II.

Radioprotectors and the theory of the radioprotective effect.

In I Vsesoyuznyy Radiobiologciheskiy S"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume III Pushchino: USSR Academy of Sciences; 1989.

Pages: 695-697.

Authors' affiliation: S.M. Korov Academy of Military Medicine

Radiobiology, Radioprotective Effect Theoretical Article Radioprotectors

P1265(28/9) Morozova IN. Lukashin BP.

Prospects for using immunomodulators as a means in increase nonspecific resistance in radiation pathology.

In I Vsesoyuznyy Radiobiologciheskiy Ś"yezd; I Всесоюзный Радиобиологический Съезд (I All-Union Radiobiology Congress) Moscow 21-27 August, 1989. Paper Abstracts. Volume III Pushchino: USSR Academy of Sciences; 1989.

Pages: 743-744.

Authors' affiliation: S.M. Korov Academy of Military Medicine

Radiobiology, Nonspecific Resistance, Y-Irradiation

Mice, Rats

Immunology, Immunomodulators, Alanine

P1250(28/90)\* Yablontsev NN.

Documents setting standards for radiation safety for space flight.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 55;1990.

[8 references; none in English]

Radiobiology, Radiation Safety Standards Humans, Cosmonauts Space Flights, Long-Term

P1284(28/90)\*\* Minkova M, Pantev B (Bulgaria)

The effects of combined physical and chemical radiation protection under conditions of simulated hypergravity.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 60-61;1990.

[9 references; none in English]

Radiobiology, Radioprotectors, Physical/Chemical

Rats

Acceleration

### ISSUE 29:

### PAPERS:

P1309(29/90)\* Zagorskaya YeA, Klimovitskiy VYa, Melnichenko VP, Rodina GP, Semenov SN. *The effects of low-frequency electromagnetic fields on physiological systems*. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(3): 3-11; 1990.

[116 references; 24 in English]

Neurophysiology, Endocrinology, Regulatory Systems, Hematology Review Article

Radiobiology, Electromagnetic Fields, Low Frequency

P1319(29/90)\*\* Katasonov SN, Shishkina SK, Maltseva IO, Ryabova TYa.

Study of changes in the electrical parameters of the skin of irradiated rats.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 34-35; 1990.

[5 references; 2 in English]

Skin, Electrical Parameters, Prognostic Indicator

Rats

Radiobiology, γ-Irradiation

P1320(29/90)\*\* Lobacheva GV.

Research on audiogenic reactions of rats after ultraviolet-irradiation of their

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 36-38; 1990.

[11 references; 1 in English]

Neurophysiology, Audiogenic Seizures Rats, Females

Radiobiology, Ultraviolet-Irradiation, Eyes

P(29/90)\*\* Malakhovskiy VN, Stemparzhetskiy OA, Bokk MI. Physiological properties of posture (balance) maintenance in dogs during immediate response to radiation.

Kosmicheskaya Biologiya i Aviakosmicheskaya.

24(4):38-40;1990.

[10 references; 2 in English]

Musculoskeletal System, Neurophysiology, Balance

Radiobiology,  $\gamma$ -Irradiation

P1327(29/90)\*\* Bugrov SA, Davydov BI, Tikhonchuk VS, Soldatov SK, Osokina TF. The protective action of mexamine in microwave irradiation of rats.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(4): 55-56; 1990.

[10 references; 5 in English]

Biological Effects, Survival

Rats. Female

Radiobiology, Microwave Irradiation, Radioprotectors, Mexamine, Serotonin

## REPRODUCTIVE SYSTEM

### ISSUE 28

### PAPER:

P1237(28/90)\* Kokoreva LV, Chuvpilo TA, Pustynnikova AM.

The effect of a high intensity magnetic field on the reproductive function of male rats.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(1): 28-30;1990.

[8 references; 1 in English]

Reproductive System, Reproductive Function (Male), Developmental Biology Rats, Male Radiobiology, Magnetic Field, High Intensity

### ISSUE 29:

#### PAPER:

P1326(29/90)\*\*Serova LV, Apanasenko ZI, Ivanovna SYa, Chelnaya NA.

The effect of hypergravity on mammals during the period of delivery and birth of offspring.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(4): 54-55; 1990.

[3 references; 2 in English]

Reproductive System, Delivery, Lactation, Developmental Biology, Psychology, Maternal Behavior
Rats, Female, Pregnant, Neonates
Hypergravity, Centrifugation

### ISSUE 26

#### PAPERS:

P1172(26/90)\* Alpatov AM, Il'in YeA, Antipov VV, Tairbekov MG. Biological experiments on COSMOS-1887. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(5): 26-32; 1988.

[21 references; 11 in English]

Space Biology and Medicine, Biological Experiments; Metabolism, Cell; Genetics; Biological Rhythms; Developmental Biology; Cytology; Population Studies Microbiology, *E. coli, Tetrahymena pyriformis, Wolffia, Haplopappus*, Guppies, Tritons, *Drosophila melanogaster;* Beetles, *Macaca mulatta*, Stick Insects Space Flight, COSMOS-1887; Radiobiology, Cosmic Radiation; Adaptation

P1177(26/90) Grigor'yev Al, Morukov BV. 370-Day antiorthostatic hypokinesia: Goals and research protocol Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(5): 47-50; 1989. [9 references; none in English]

Space Biology and Medicine; Cardiovascular and Respiratory Systems; Cardiovascular Deconditioning; Body Fluids; Musculoskeletal System; Metabolism; Gastrointestinal System; Hematology; Immunology

Humans, Males
Hypokinesia with Head-Down Tilt, Long-Term; Prophylactic Countermeasures, Physical

Hypokinesia with Head-Down Tilt, Long-Term; Prophylactic Countermeasures, Physic Exercise; Drugs; LBNP; Karkas Suit; Adaptation

P1194 (26/90)Kovalenko YeA, Kasyan II

On the Pathogenesis of Weightlessness

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya
89(3): 9-18. Received by journal 6/6/88

Space Biology and Medicine; Neurophysiology, Space Motion Sickness; Body Fluids; Cardiovascular and Respiratory Systems; Endocrinology; Musculoskeletal System; Enzymology; Metabolism, Bioenergetics

Humans, Cosmonauts, Rats

Weightlessness, Pathogenesis; Deconditioning; Adaptation; Space Flight, Long-Term; Salyut, Soyuz, Weightlessness Simulations, COSMOS; Prophylactic Countermeasures; Physical Exercise, LBNP

#### CONFERENCE REVIEW

CR12(26/90)\* Drozd YuV.

Report on: Twenty-first Symposium on Space Biology and Medicine (Baranov-

Sandomerski, June 1988)

Kosmicheskaya Biologlya i Aviakosmicheskaya Meditsina.

23(5): 93-96; 1989.

KEY WORDS: Space Biology and Medicine; Human Performance; Radiobiology; Equipment and Instrumentation; Operational Medicine; Musculoskeletal System; Weightlessness; Acceleration; Prophylactic Countermeasures; Hypodynamia; Hypokinesia; Psychology, Stress; Space Flight; COSMOS-1887; Nutrition; Metabolism; Life Support Systems, CELSS; Neurophysiology, Motion Sickness; Sleep; Immunology

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### CONFERENCE REVIEW:

CR13(27/90)\* Gyurdzhian AA, Zorile VI.

The work of the section on Aviation and Space Medicine of the Moscow Physiological Society.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(6): 91-92; 1989.

KÉY WORDS: Space Medicine; Aviation Medicine

SPECIAL FEATURE:

Essay by N. Gurovskiy; In the Interests of Public Health

In: Aviatsiya i Kosmonavtika; 11/89

KEY WORDS: Space Medicine, Operational Medicine, Public Health, Equipment and Instrumentation, Personnel Selection, Hematology, Biological Rhythms

### ISSUE 28:

PAPER:

P1267(28/90)\*\* Gazenko OG, Grigor'yev Al, Yegorov AD.

Medical investigations of long-term manned space flight on-board Salyut-7-Soyuz-T.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

24(2): 9-15; 1990.

[11 references; 13 in English]

Space Biology and Medicine, Operational Medicine, Cardiovascular and Respiratory System, Body Fluids, Musculoskeletal System, Motor Coordination, Bones, Muscle Mass, Neurophysiology, Vestibular System, Sensory Systems, Endocrinology, Nutrition, Human Performance

Humans, Cosmonauts

Space Flight, Salyut-7, Long-Term, EVAs, Prophylactic Countermeasures, Exercise, LBNP

## ISSUE 29:

### PAPER:

P1310(29/90)\*\* Gazenko OG, Grigor'yev AI, Bugrov SA, Yegorov VV, Bogomolov VV, Kozlovskaya IB, Tarasov IK.

Review of the major results of medical research during the flight of the second prime crew of the Mir Space Station.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

23(4): 3-11; 1990.

[16 references; none in English]

Space Biology and Medicine, Operational Medicine, Habitability and Environmental Effects, Microclimate, Atmosphere, Microbiology, Cardiovascular and Respiratory Systems, Musculoskeletal System, Neurophysiology, Motor Effects, Nutrition, Metabolism, Endocrinology, Body Fluids, Adaptation, Radiobiology, Hematology, Immunology, Psychology

Humans, Cosmonauts

Space Flight, Long-Term, Mir, Second Prime Crew, Prophylactic Countermeasures

## MONOGRAPH:

M164(29/90) Flom TV (editor)

Trudy XXIII Chteniy Posvyashchennykh Razrabotke Nauchnogo Naslediya i Razvitiyu Idey K.E. Tsiolkovskogo: Sektsiya "Problemy Kosmicheskoy Meditsiny i Biologii" Mediko-Biologicheskiye Problemy Obespecheniya Kosmicheskikh Poletov v Svete Idey K.E. Tsiolkosvskogo

Труды XXIII Чтений Посвященных Разработке Научного Наследия и Развитию Идей К.Э. Циолковского: Секция «Проблемы Космической Медицины и Биологии» Медико-Биологические Проблемы Обеспечения Космических Полетов в Свете Идеы К.Э. Циолкосвского

Proceedings of the XXIII Lecture Series Devoted to Developing the Scientific Ideas of K.E.Tsiolkovskiy: Section on "Problems of Space Medicine and Biology. Biomedical Problems in the Support of Space Flight in Light of the Ideas of K.E. Tsiolkovskiy".

Kaluga 13-16, Septembers 1988.

USSR Academy of Sciences: 1989: 98 pages.

Affiliation: Commission on Development of the Scientific Heritage of K.E. Tsiolkovskiy, USSR Academy of Sciences; K.E. Tsiolkovskiy State Museum on the History of Cosmonautics

KEY WORDS: Space Biology and Medicine, Biological Rhythms, Exobiology, Man-Machine Systems, Human Performance, Group Dynamics, Immunology, Aviation Medicine, Psychology, Biomechanics, Space Suits, Ground Simulations, Botany, Plant Gravity Response, Plant Development, Thermal Homeostasis, Perception, Time, Visual, Lunar Soil

## CONFERENCE REPORT:

CR15(29/90) Program of the: Ninth All-Union Conference on Space Biology and Medicine, Kaluga 18-21 July, 1990

KEY WORDS: Space Biology and Medicine, Space Flight, Long-Term, Mir, Aviation Medicine, COSMOS-1887,-2044, Operational Medicine, Pharmacological Countermeasures, Acceleration Tolerance, Gastrointestinal System, Immunity, Adaptation, Oxygen Homeostasis, LBNP, Hypokinesia With Head-Down Tilt, Thermal Regulation, Orthostatic Tolerance, Cardiovascular and Respiratory Systems, Hypoxia, Neurophysiology, Amino Acids, Biological Rhythms, Endocrinology, Metabolism, Musculoskeletal System, Bone, Muscle, Hematology, Lipid Peroxidation, Cosmonaut Training, Psychology Human Performance, Equipment and Instrumentation, Developmental Biology, Radiobiology, Habitability and Environmental Effects, Life Support Systems, Microbiology, Mathematical Modeling, Reproductive System

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